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## Yields of the Field Experiments 1993

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### 93/R/CS/140 Chemical Reference Plots - S. Barley

#### Rothamsted Research

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93/R/CS/140

**CHEMICAL REFERENCE PLOTS**

**Object:** To study the persistence in soil of agricultural chemicals applied annually, singly and in combination, and their effects on soil microflora and on yield of continuous s. barley - Long Hoos V 3.

**Sponsors:** R.H. Bromilow, A.A. Evans, P.H. Nicholls.

The 20th year, s. barley.

For previous years see 74-92/R/CS/140.

**Design:** Single replicate of 32 plots.

**Whole plot dimensions:** 4.06 x 4.57.

Treatments, applied cumulatively every year except as stated:

All combinations of:-

1. **WEEDKLLR** Weedkiller in autumn:  

NONE	None
GLYPHOS	Glyphosate at 1.4 kg to barley stubble each autumn from 1979 to 1984, at 0.72 kg in 1985, at 0.54 kg in 1986, at 1.3 kg in 1987 and at 1.5 kg in 1988 to 1992.
  
2. **FUNGCIDE[1]** Fungicide in autumn:  

NONE	None
TRIADIM	Triadimefon at 0.25 kg in autumn 1981, 1982, 1984 to 1992, 0.28 kg in autumn 1983
  
3. **FUNGCIDE[2]** Fungicide in spring:  

NONE	None
BENOMYL	Benomyl at 4 kg to the seedbed
  
4. **INSCTCDE** Insecticide:  

NONE	None
CHLORFEN	Chlorfenvinphos at 2 kg to the seedbed
  
5. **NEMACIDE** Nematicide:  

NONE	None
ALDICARB	Aldicarb at 6 kg to the seedbed

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**Experimental diary:**

28-Sep-92 : T : **WEEDKLLR** GLYPHOS: Glyphosate at 1.5 kg in 220 l.  
: T : **FUNGICIDE[1]** TRIADIM: Triadimefon at 0.25 kg in 220 l.  
08-Oct-92 : B : PK as (0:18:36) at 1390 kg.  
21-Jan-93 : B : Ploughed.  
08-Mar-93 : B : 34.5% N at 440 kg.  
: B : Spring-tine cultivated.  
09-Mar-93 : T : **FUNGICIDE[2]** BENOMYL: Benomyl at 4.0 kg in 5000 l,  
applied by watering can.  
: T : **INSTCDE** CHLORFEN: Chlorfenvinphos at 2.0 kg as  
granules, applied by hand.  
: T : **NEMACIDE** ALDICARB: Aldicarb at 6.0 kg as granules,  
applied by hand.  
11-Mar-93 : B : Heavy spring-tine cultivated, rotary harrowed twice,  
Alexis, undressed, drilled at 400 seeds per square  
metre.  
28-May-93 : B : Ally at 30 g and Starane 2 at 0.50 l in 200 l.  
13-Aug-93 : B : Combine harvested.

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GRAIN TONNES/HECTARE

\*\*\*\*\* Tables of means \*\*\*\*\*

<b>FUNGCIDE [1]</b>	NONE	TRIADIM	Mean
<b>WEEDKLLR</b>			
NONE	3.99	4.17	4.08
GLYPHOS	4.31	4.32	4.31
Mean	4.15	4.24	4.20
<b>FUNGCIDE [2]</b>	NONE	BENOMYL	Mean
<b>WEEDKLLR</b>			
NONE	3.94	4.23	4.08
GLYPHOS	4.35	4.28	4.31
Mean	4.14	4.25	4.20
<b>FUNGCIDE [2]</b>	NONE	BENOMYL	Mean
<b>FUNGCIDE [1]</b>			
NONE	4.16	4.15	4.15
TRIADIM	4.13	4.36	4.24
Mean	4.14	4.25	4.20
<b>INSTCDE</b>	NONE	CHLORFEN	Mean
<b>WEEDKLLR</b>			
NONE	4.07	4.10	4.08
GLYPHOS	4.31	4.32	4.31
Mean	4.19	4.21	4.20
<b>INSTCDE</b>	NONE	CHLORFEN	Mean
<b>FUNGCIDE [1]</b>			
NONE	4.21	4.10	4.15
TRIADIM	4.17	4.32	4.24
Mean	4.19	4.21	4.20
<b>INSTCDE</b>	NONE	CHLORFEN	Mean
<b>FUNGCIDE [2]</b>			
NONE	4.07	4.22	4.14
BENOMYL	4.31	4.19	4.25
Mean	4.19	4.21	4.20
<b>NEMACIDE</b>	NONE	ALDICARB	Mean
<b>WEEDKLLR</b>			
NONE	4.22	3.94	4.08
GLYPHOS	4.53	4.10	4.31
Mean	4.38	4.02	4.20

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GRAIN TONNES/HECTARE

\*\*\*\*\* Tables of means \*\*\*\*\*

NEMACIDE	NONE	ALDICARB	Mean
<b>FUNGCIDE [1]</b>			
NONE	4.30	4.01	4.15
TRIADIM	4.46	4.03	4.24
Mean	4.38	4.02	4.20

NEMACIDE	NONE	ALDICARB	Mean
<b>FUNGCIDE [2]</b>			
NONE	4.39	3.90	4.14
BENOMYL	4.37	4.14	4.25
Mean	4.38	4.02	4.20

NEMACIDE	NONE	ALDICARB	Mean
<b>INSCTCDE</b>			
NONE	4.33	4.05	4.19
CHLORFEN	4.42	3.99	4.21
Mean	4.38	4.02	4.20

WEEDKLLR	FUNGCIDE [1]	NONE		TRIADIM	
	FUNGCIDE [2]	NONE	BENOMYL	NONE	BENOMYL
NONE		3.92	4.06	3.95	4.39
GLYPHOS		4.39	4.24	4.31	4.32

WEEDKLLR	FUNGCIDE [1]	NONE		TRIADIM	
	INSCTCDE	NONE	CHLORFEN	NONE	CHLORFEN
NONE		4.00	3.99	4.14	4.20
GLYPHOS		4.42	4.21	4.20	4.43

WEEDKLLR	FUNGCIDE [2]	NONE		BENOMYL	
	INSCTCDE	NONE	CHLORFEN	NONE	CHLORFEN
NONE		3.86	4.02	4.28	4.17
GLYPHOS		4.28	4.42	4.35	4.21

FUNGCIDE [1]	FUNGCIDE [2]	NONE		BENOMYL	
	INSCTCDE	NONE	CHLORFEN	NONE	CHLORFEN
NONE		4.10	4.21	4.31	3.99
TRIADIM		4.03	4.23	4.32	4.40

WEEDKLLR	FUNGCIDE [1]	NONE		TRIADIM	
	NEMACIDE	NONE	ALDICARB	NONE	ALDICARB
NONE		4.02	3.96	4.42	3.92
GLYPHOS		4.57	4.06	4.50	4.13

WEEDKLLR	FUNGCIDE [2]	NONE		BENOMYL	
	NEMACIDE	NONE	ALDICARB	NONE	ALDICARB
NONE		4.10	3.78	4.35	4.11
GLYPHOS		4.68	4.02	4.39	4.17

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GRAIN TONNES/HECTARE

\*\*\*\*\* Tables of means \*\*\*\*\*

		FUNGICIDE [2]		BENOMYL	
FUNGICIDE [1]	NEMACIDE	NONE	ALDICARB	NONE	ALDICARB
NONE		4.35	3.96	4.24	4.06
TRIADIM		4.43	3.84	4.49	4.22

		INSCTCDE		CHLORFEN	
WEEDKLLR	NEMACIDE	NONE	ALDICARB	NONE	ALDICARB
NONE		4.14	4.00	4.31	3.88
GLYPHOS		4.53	4.09	4.53	4.10

		INSCTCDE		CHLORFEN	
FUNGICIDE [1]	NEMACIDE	NONE	ALDICARB	NONE	ALDICARB
NONE		4.39	4.03	4.20	3.99
TRIADIM		4.28	4.07	4.64	3.99

		INSCTCDE		CHLORFEN	
FUNGICIDE [2]	NEMACIDE	NONE	ALDICARB	NONE	ALDICARB
NONE		4.29	3.85	4.49	3.95
BENOMYL		4.38	4.25	4.35	4.03

\*\*\* Standard errors of differences of means \*\*\*

Margins of two factor tables	0.073
Two factor tables	0.104
Three factor tables	0.146

\*\*\*\*\* Stratum standard errors and coefficients of variation \*\*\*\*\*

Stratum	d.f.	s.e.	cv%
WP	6	0.207	4.9

GRAIN MEAN DM% 85.8

PLOT AREA HARVESTED 0.00069